

Work Order ID 65592

Thursday, January 20, 2011 10:22:19 AM



Page 1

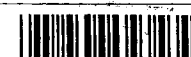
DRAB GREEN

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 1/21/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: ME Date: 11-01-20 Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2580	Rev.D DEO-D1

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG003

N/A

110

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender.

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

11-3-8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65592

Thursday, January 20, 2011 10:22:19 AM



Page 2

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 1/21/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

0.00



Skidtubes

Memo

0.00

Skidtubes

1- Deburr ends and remove bending marks

2- Prepare tube for swaging as per QSI 002

> DP

11-3-9

130

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

4

BE 11/03/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65592

Thursday, January 20, 2011 10:22:19 AM



Page 3

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 1/21/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R□□□ Aluminum Rod

M116577

BE 11/03/09

2-Grind welds on step as per Dwg D2580

3-Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x 17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension.

DP 11-3-10

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64", adjust stopper not to hit web. Debur

BE 11-3-10

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

Pin →

150

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

8/03/17

✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D205-634-041 PAR #: _____ Fault Category: Scratches NCR: Yes No DQA: _____ Date: 11/03/28
 Resolution: rework Disposition: rework QA: N/C Closed: CP Date: 11/03/28

NCR: 65592		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11/03/11	# 140	Found at inspection that the First saddle and 9th + 10th holes from five have cracks in the +bolt space	MD 11/03/11	→ try to remove First saddle while to see if it works	[Signature] 11-3-15	S 11/03/17	MD 11/03/11	S 11/03/11
		Be cracks formed during Swagging process. R.C. process	CP 11.03.17 QSI 042	REPLACE 7, 11, 12, 20 FROM AFT END WITH 0049 WALL D4202-1 B67308 (x4)	BE 11/03/17	S 11/03/17	CP 11.03.17 QSI 042	S 11/03/17
11/03/17	# 140	Darning + -bolt removal a notch was formed on the 7th hole from aft. Be end mill took too much L.H.	CP 11.03.17 QSI 042	→ Fill notch in with weld A/R miles 77 → Grind flush + ensure hole is still Round	BE 11/03/17	S 11/03/17	CP 11.03.17 QSI 042	S 11/03/17

NOTE: Date & initial all entries R.C. process

Work Order ID 65592

Thursday, January 20, 2011 10:22:19 AM

Page 4

Item ID: D205-634-041

Accept

Setup Start

Revision ID:

Stop

Item Name: Replacement Skidtube

Start Date: 1/21/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 2/11/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

170

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

1 BR 11-3-12

185

Drab Green(Ref:4.3.5.11)per QSI005 4.3 (Alum)

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:
OVEN TEMPERATURE:
FINISH TIME:7:20
320°
7:50

1 BR 11-3-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65592

Thursday, January 20, 2011 10:22:19 AM



Page 5

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 1/21/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Dulz 1/22

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65592

Thursday, January 20, 2011 10:22:19 AM



Page 6

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 1/21/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

200

0.00



HandFinish

Hand Finishing

Memo

0.00

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of

Sikaflex on insert holes before installing wearplates

A/R ☐ ☐ ☐ Sikaflex-291 ☐ 11160400

Sikaflex expire date: 11/09

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as
per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with
Sikaflex. Clean excess adhesive

A/R ☐ ☐ ☐ Sikaflex-291 ☐ 11160400

Sikaflex expire date: 11/09

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

Batch: 11160402

1 0 11/02/21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65592

Thursday, January 20, 2011 10:22:19 AM



Page 7

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 1/21/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8.11.03/22



Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220



Packaging

Packaging

Packaging

0.00

Memo

0.00

Identify and pack for shipping as per PPPD205-634-041

Location:

PPP Rev:

PPP 67110

11/3/22

230



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

11/3/22

mrp

11-03-22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries


Thursday, January 20, 2011 10:22:14 AM

Page 1

[illegible][illegible]**Required Date: 2/11/2011**

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
KJ IPP Rev P 10.02.19
per PAR09-043 EC verified by:DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
10.12.01 as per chg003 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4202-1 		Manufactured	No			140	Each	106.0000	20	20			
Spacer													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG	66929			106					
					64608			106					
D2580-1 		Manufactured	No			110	Each	2.0000	1	1			
205 Skidtube bent detail													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG	66727			1					
					63051			1					
				ST046				1					
					59856			1					
D2576-3 		Manufactured	No			140	Each	62.0000	1	1			
Step (maching detail)													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG				62					
					46661			14					
					52215			48					

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, January 20, 2011 10:22:14 AM

Page 2

Work Order ID: 65592

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 1/21/2011

Required Date: 2/11/2011

Start Qty: 1.00

Required Qty: 1.00

D2855 *drab green*
Cap

Manufactured No

200 Each

54.0000

1

1



xl 11/03/21

Location

Loc Qty

Loc Code

FP6

3

B65519

xl

56613

1

63634

2

ST026

51

50513

1

50770

28

51539

2

53791

20

AN3-5A

Purchased

No

200

Each

1,085.000

2

2



xl 11/03/21

Bolt

Location

Loc Qty

Loc Code

ST350

1085

115016

385

115371

500

116632

200

AN960JD10L

NAS1149D0332J

Purchased

No

200

Each

0.0000

2

2



M117010

(x2) xl 11/03/21

Washer

Thursday, January 20, 2011 10:22:14 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, January 20, 2011 10:22:14 AM

Page 3

Work Order ID: 65592

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 1/21/2011

Required Date: 2/11/2011

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130 Purchased No

200

Each

1,628.000

50

50



Insert



HL 4103121

Location

Loc Qty

Loc Code

FP

689

115079

689

ST282

939

113238

17

115502

500

115581

422

x50

AN3C4A Purchased No

200

Each

1,230.000

50

50



BOLT



HL 4103121

Location

Loc Qty

Loc Code

ST350

1230

M117010

115300

25

115936

8

116075

997

116590

200

x50

AN960C10L NAS1149C0332 Purchased No

200

Each

25.0000

50

50



washer



HL 4103121

Location

Loc Qty

Loc Code

ST245

25

107534

25

M116304

x50

Thursday, January 20, 2011 10:22:15 AM

Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, January 20, 2011 10:22:15 AM

Page 4

Work Order ID: 65592

Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 1/21/2011

Required Date: 2/11/2011



Start Qty: 1.00

Required Qty: 1.00

D3566-13 Manufactured No 200 Each 26.0000 1 1
  all 11/03/21
 Gasket



Location Loc Qty Loc Code

FP012 6 B66137
 61996 6
 FP014 20
 64070 20

D3566-5 Manufactured No 200 Each 13.0000 1 1
  all 11/03/21
 Gasket



Location Loc Qty Loc Code

FP 12 B65528
 64789 12
 FP015 1
 63574 1

D3566-1 Manufactured No 200 Each 6.0000 2 2
  all 11/03/21
 Gasket

Location Loc Qty Loc Code

FP015 6 B66548
 57715 1
 63573 5

D3564-11 Manufactured No 200 Each 8.0000 1 1
  all 11/03/21
 Wearshoe

Location Loc Qty Loc Code

FP019 8 B66554
 62236 8

Thursday, January 20, 2011 10:22:15 AM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, January 20, 2011 10:22:16 AM

Page 5

Work Order ID: 65592

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 1/21/2011

Required Date: 2/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3564-13 Manufactured No 200 Each 16.0000 1 1
Wearshoe

Location	Loc Qty	Loc Code
FP17	16	B66549
59660	1	
61828	3	
62229	12	

VI

D3564-9 Manufactured No 200 Each 17.0000 1 1
Wearshoe

Location	Loc Qty	Loc Code
FP	1	B65524
55334	1	
FP019	1	
61709	1	
FP19	15	
62238	15	

VI

D3564-5 Manufactured No 200 Each 22.0000 1 1
Wearshoe

Location	Loc Qty	Loc Code
FG	1	B66148
34806	1	
FP19	2	
57525	1	
58709	1	
FP-19	19	
63575	8	
65058	11	

VI

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, January 20, 2011 10:22:16 AM

Page 6

Work Order ID: 65592

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 1/21/2011

Required Date: 2/11/2011

Start Qty: 1.00

Required Qty: 1.00

D2594-3

Manufactured No

200

Each

739.0000

16

16



O-Ring, 205 Skidtube



all

u/03/21

Location

Loc Qty

Loc Code

FP

43

55546

19

58191

12

59358

12

fpa

696

61762

696

X/6

D2594-1

drab green

Manufactured No

200

Each

235.0000

16

16



Plug, 205 Skidtube



all

u/03/21

Location

Loc Qty

Loc Code

FP

183

42807

112

55002

71

FP14

52

58434

15

62893

37

B67082

X/6

Thursday, January 20, 2011 10:22:16 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN <i>[Signature]</i>	DRAWN BY <i>R4</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

RELEASED
07.06.28 *[Signature]***DEO ATTACHED**

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
SEE NOTES ON
PAGE 2 FOR D2580-041 AND
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

Copyright © 1996 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

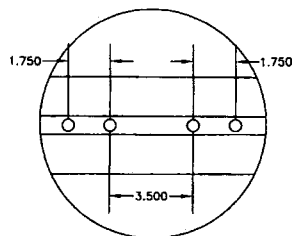
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

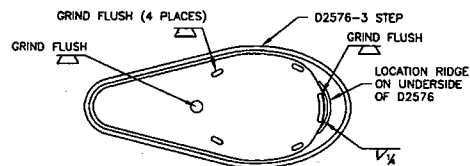
NOTE: Date & initial all entries

DETAIL A
SCALE 5:24



ebss 9 #

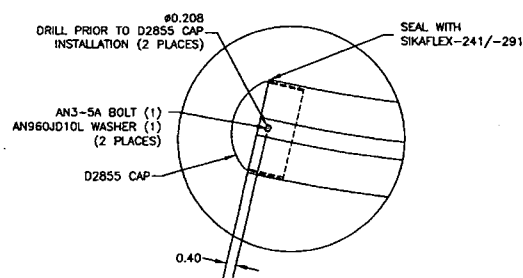
DETAIL B
SCALE 5:24



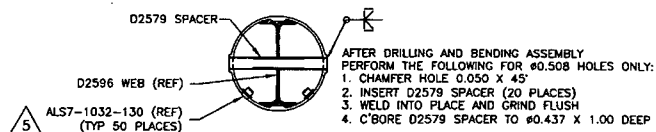
RELEASED
07.06.28

DEO ATTACHED

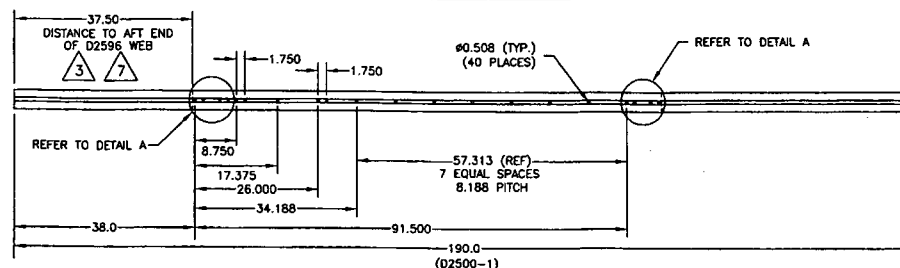
DETAIL C
SCALE 5:24



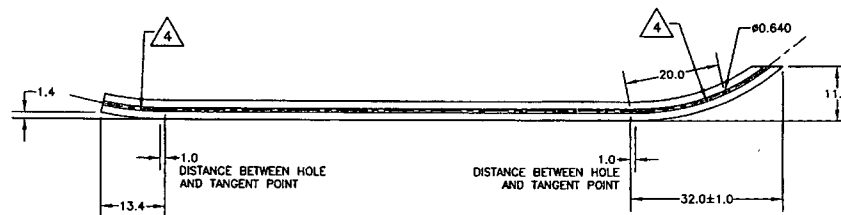
SECTION D-D
SCALE 5:24



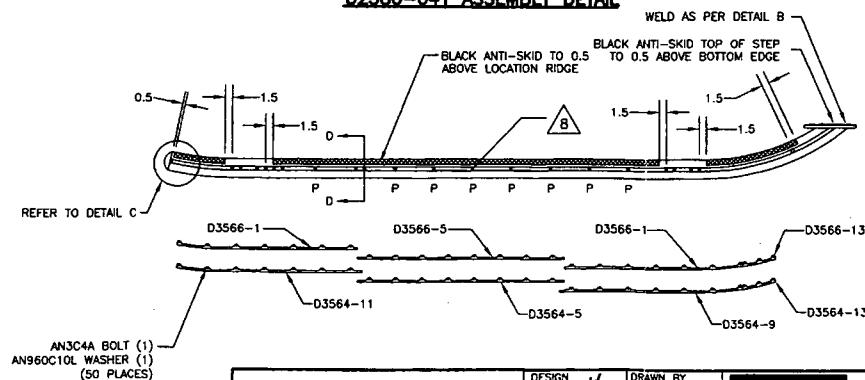
D2580-1 DRILLING DETAIL



D2580-1 BENDING AND CUTTING DETAIL



D2580-041 ASSEMBLY DETAIL



D2580-041 NOTES

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

COPYRIGHT © 1996 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DESIGN	DRAWN BY	DART	DART AEROSPACE LTD.
CHECKED	APPROVED	DRAWING NO.	REV. D
DATE	07.02.27	D2580	SHEET 2 OF 3
		TITLE	SCALE
		205 SKIDTUBE ASSEMBLY	1:24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

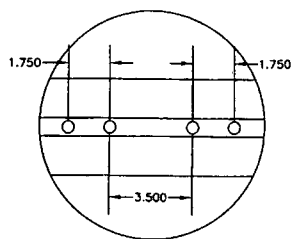
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

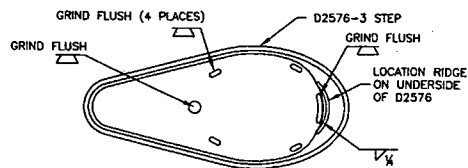
NOTE: Date & initial all entries

DETAIL E
SCALE 5:24



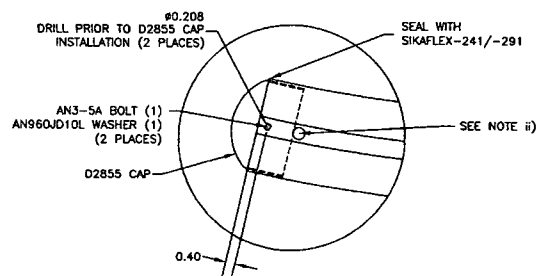
RELEASED
07-06-18

DETAIL F
SCALE 5:24

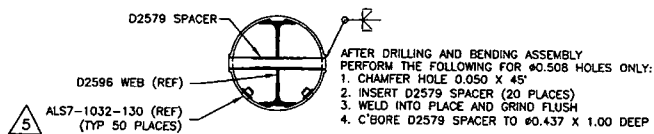


DEO ATTACHED

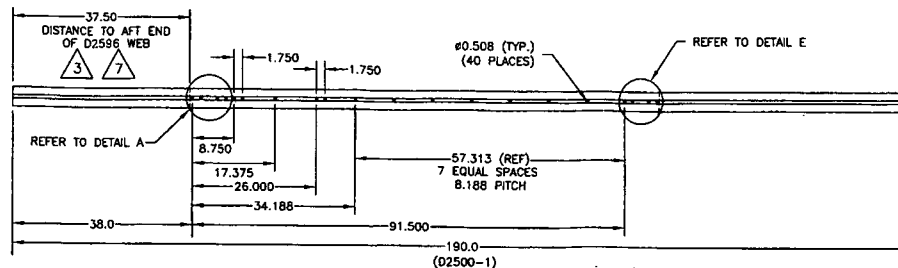
DETAIL G
SCALE 5:24



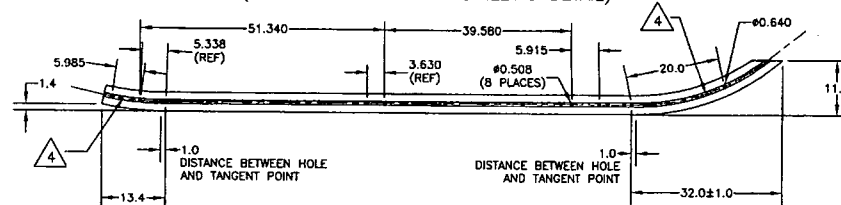
SECTION H-H
SCALE 5:24



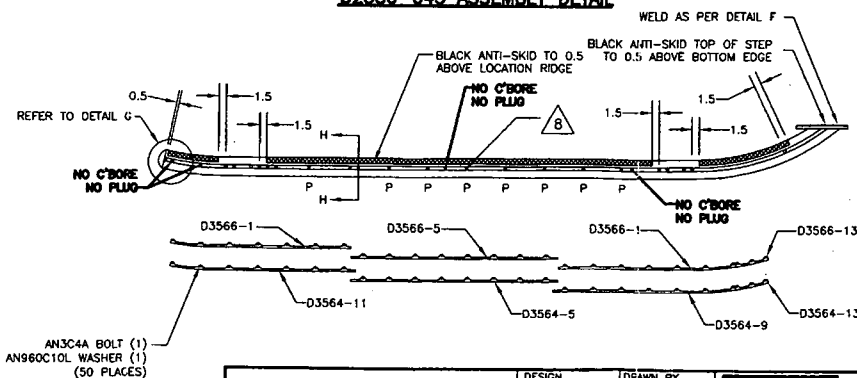
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAIL
(MAKE FROM D2580-1 DRILLING DETAIL)



D2580-045 ASSEMBLY DETAIL



D2580-045 NOTES

- FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

COPYRIGHT © 1996 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL
AND IS SUPPLIED ON THE EXPRESS CONDITION
THAT IT IS NOT TO BE USED FOR ANY PURPOSE
OR COPIED OR COMMUNICATED TO ANY OTHER
PERSON WITHOUT WRITTEN PERMISSION FROM
DART AEROSPACE LTD.

DESIGN	DRAWN BY	DART	DART AEROSPACE LTD.
CHECKED	APPROVED	DRAWING NO.	REV. D
DATE	TITLE	D2580	SHEET 3 OF 3
07.02.27	205 SKIDTUBE ASSEMBLY	SCALE	1:24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2580-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>L</i>	MFG. APPR. <i>E</i>	APPROVED <i>MP</i>		DE APPR. <i>H</i>		
DATE 10.09.22	DATE 10.11.04	DATE 10.11.04	DATE 10/11/04		DATE 10.11.04		

PURPOSE:

CHANGE ALL WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

26559 #

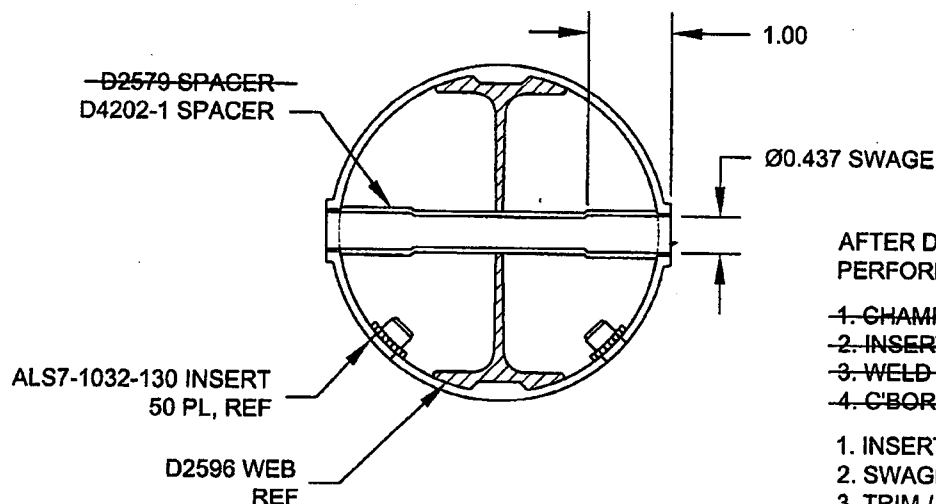
WAS

QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045		
20	24	D2579	CROSS BOLT SPACER

IS

20	24	D4202-1	SPACER
----	----	---------	--------

SECTION D-D & SECTION H-H ARE AMENDED AS FOLLOWS:



SECTION D-D
NOT TO SCALE

SECTION H-H
NOT TO SCALE

RELEASED
2010-11-18
MP

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C-BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 24 PL (-045)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Chris Provencal

From: David Shepherd <dshepherd@dartaero.com>
Sent: March 16, 2011 6:21 PM
To: 'Chris Provencal'
Cc: 'Mike Petsche'; 'Linda Lacelle'; 'Bill Beckett'
Subject: RE: 0.049 Wall Xbolt Spacers

Chris,

The substitution is acceptable. However, I would still like to see that this is repeatable. Per my earlier suggestion, I assume production is building a couple of tubes with 0.049 wall crossbolt spacers to verify that there is no cracking after several swagings???

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Wednesday, March 16, 2011 9:14 AM
To: David Shepherd
Cc: Mike Petsche
Subject: 0.049 Wall Xbolt Spacers

David,

To approve the re-worked xbolt spacers, I'd need to attach an email from you giving OK to substitute the 0.058" wall crossbolt spacers with 0.049" wall crossbolt spacers. The crossbolt spacers are otherwise made to D4202 Rev. A.

The justification would be the initial testing, as recorded in the original design review, which showed that 0.049" wall xbolt spacers were stronger than welded/c-bored crossbolt spacers. These findings were confirmed when we tested another batch of swaged vs welded samples yesterday (March 15th, 2011).

Chris